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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,073	03/11/2004	Douglas M. Baney	10021233-1	8089

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AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

PHAN, HANH

ART UNIT	PAPER NUMBER
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2613

MAIL DATE	DELIVERY MODE
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02/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/800,073

Applicant(s)

BANEY ET AL.

Examiner

Hanh Phan

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5-12 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-12 and 22-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 3, 5-12, 22-24 and 26-31 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 7,265,849 (Gurunathan et al). Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations

recited in claims 1, 3, 5-12, 22-24 and 26-31 of the instant application are encompassed by claims 1-8 of US Patent No. 7,265,849 (Gurunathan et al).

10/800,073 (Claim 1)	US Patent No. 7,265,849 (Claims 1, 4 and 5)
<p>A system for superheterodyne detection comprising:</p> <p>        a first conversion unit for performing</p> <p>a first heterodyne operation on an optical input signal to generate an electrical IF signal, the first conversion unit comprises:</p> <p>a local oscillator for generating a swept optical local oscillator signal, a coupler for coupling the optical input signal and the swept local oscillator signal, and a photodetector; and</p>	<p>A system for determining a spectral content of an optical signal, comprising:</p> <p>        an optical hybrid for combining said optical signal and an optical local oscillator signal to generate phase-diverse components; a plurality of photodetectors with each photodetector illuminated by a respective one of said phase-diverse components thereby mixing said optical signal and said optical local oscillator (Claim 1);</p> <p>a laser source for generating said optical local oscillator signal (Claim 4);</p> <p>said laser source sweeps said optical local oscillator across a predetermined spectrum (Claim 5); and</p>

<p>a second conversion unit electrically coupled to the first conversion unit comprises: an electrical local oscillator for generating a fixed electrical local oscillator signal, and a mixer coupled to the electrical local oscillator for performing a second heterodyne operation when mixing said electrical IF signal and said fixed electrical local oscillator signal to generate an electrical output signal suitable for signal processing.</p>	<p>a plurality of mixers for mixing with an electrical LO signal; and a signal processing module that determines said spectral content utilizing signals from said plurality of mixers (Claim 1).</p>
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Regarding claims 3 and 24, similarly as described above, Gurunathan et al discloses the first conversion unit comprises: an IF amplifier and an IF filter (see claims 1 and 6 of US Patent No. 7,265,849).

Regarding claims 5, 6, 22, 26 and 27, similarly as described above, Gurunathan et al discloses where said signal processing comprises a reconstruction of an optical spectrum of said optical input signal (see claims 1 and 4-6 of US Patent No. 7,265,849).

Regarding claims 7 and 30, similarly as described above, Gurunathan et al discloses the first conversion unit reduces the effect of intensity noise (see claims 1 and 4-6 of US Patent No. 7,265,849).

Regarding claim 8, similarly as described above, Gurunathan et al discloses the first conversion unit separates an image in the electrical IF signal to improve amplitude accuracy of the optical input signal (see claims 1-6 of US Patent No. 7,265,849).

Regarding claims 9 and 28, similarly as described above, Gurunathan et al discloses the first conversion unit produces a non-zero electrical IF signal (see claims 1-6 of US Patent No. 7,265,849).

Regarding claims 10 and 29, similarly as described above, Gurunathan et al discloses the second conversion unit comprises a microwave image rejection mixer (see claims 1-6 of US Patent No. 7,265,849).

Regarding claim 11, similarly as described above, Gurunathan et al discloses the second conversion unit comprises a band pass filter coupled to the first conversion unit, wherein the band pass filter is offset from an electrical local oscillator in the second conversion unit to further reduce an image (see claims 1-6 of US Patent No. 7,265,849).

Regarding claim 12, as described above, Gurunathan et al discloses the second conversion unit downconverts the electrical IF signal to the electrical output signal (see claims 1-6 of US Patent No. 7,265,849).

Regarding claim 23, similarly as described above, Gurunathan et al discloses the second conversion unit comprises: an electrical local oscillator for generating a fixed electrical local oscillator signal; and a mixer coupled to the electrical local oscillator for performing a second heterodyne operation when mixing said electrical IF signal and said fixed electrical local oscillator signal to generate an electrical output signal suitable for signal processing (see claims 1 and 4-6 of US Patent No. 7,265,849).

Regarding claim 31, as described above, Gurunathan et al discloses a system for superheterodyne detection comprising:

a first conversion unit for performing a first heterodyne operation on an optical input signal to generate an electrical IF signal; and

a second conversion unit electrically coupled to the first conversion unit for performing a second heterodyne operation to generate an electrical output signal; and

a balanced detection unit for canceling intensity noise (see claims 1-6 of US Patent No. 7,265,849).

4. Claim 25 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 7,265,849 (Gurunathan et al) in view of Tsushima et al (US Patent No. 5,305,134).

Regarding claim 25, Gurunathan et al differs from claim 25 in that he fails to teach an optical filter placed in front of the first conversion unit. Tsushima et al, from the same field of endeavor likewise teaches optical heterodyne receiver (Figure 1). Tsushima et al further teaches an optical filter (i.e., optical filter 6, Fig. 1) placed in front of the first conversion unit (i.e., Fig. 1, col. 3, lines 46-67 and col. 4, lines 1-42). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the optical filter placed in front of the first conversion unit as taught by Tsushima et al in the system of Gurunathan et al. One of ordinary skill in the art would have been motivated to do this since allowing selecting the wanted signal and eliminating the unwanted signal and increasing the signal to noise ratio.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3, 5-12 and 22-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Gurunathan et al (US Patent No. 7,265,849).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 22 and 31, referring to Figure 2, Gurunathan et al teaches a system for superheterodyne detection comprising:

a first conversion unit for performing a first heterodyne operation on an optical input signal to generate an electrical IF signal, the first conversion unit comprises: a local oscillator for generating a swept optical local oscillator signal, a coupler for coupling the optical input signal and the swept local oscillator signal, and a photodetector (As indicated in Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-



7 and col. 7, lines 10-15, Gurunathan et al teaches a first conversion unit comprises a local oscillator 102 for generating a swept optical oscillator signal, a optical coupler 201 for coupling the optical input signal and the swept local oscillator and photodetectors 103a and 103c for performing a first heterodyne operation on an optical input signal to generate an electrical IF signal); and

a second conversion unit electrically coupled to the first conversion unit for performing a second heterodyne operation to generate an electrical output signal, the second conversion unit comprises: an electrical local oscillator for generating a fixed electrical local oscillator signal, and a mixer coupled to the electrical local oscillator for performing a second heterodyne operation when mixing said electrical IF signal and said fixed electrical local oscillator signal to generate an electrical output signal suitable for signal processing (As indicated in Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15, Gurunathan et al teaches a second conversion unit comprises an electrical local oscillator 204 for generating a fixed electrical local oscillator signal, and mixers 203a and 203b coupled to the electrical local oscillator for performing a second heterodyne operation when mixing the electrical IF signal and the fixed electrical local oscillator signal to generate an electrical output signal suitable for signal processing).

Regarding claims 3 and 24, Gurunathan et al further teaches the first conversion unit comprises: an IF amplifier and an IF filter (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claims 5, 6, 26 and 27, Gurunathan et al further teaches where the signal processing comprises a reconstruction of an optical spectrum of said optical input signal (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claims 7 and 30, Gurunathan et al further teaches the first conversion unit reduces the effect of intensity noise (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claim 8, Gurunathan et al further teaches the first conversion unit separates an image in the electrical IF signal to improve amplitude accuracy of the optical input signal (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claims 9 and 28, Gurunathan et al further teaches the first conversion unit produces a non-zero electrical IF signal (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claims 10 and 29, Gurunathan et al further teaches the second conversion unit comprises a microwave image rejection mixer (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claim 11, Gurunathan et al further teaches the second conversion unit comprises a band pass filter coupled to the first conversion unit, wherein the band pass filter is offset from an electrical local oscillator in the second conversion unit to further reduce an image (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claim 12, Gurunathan et al further teaches the second conversion unit downconverts the electrical IF signal to the electrical output signal (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claim 23, Gurunathan et al further teaches the second conversion unit comprises: an electrical local oscillator for generating a fixed electrical local oscillator signal; and a mixer coupled to the electrical local oscillator for performing a second heterodyne operation when mixing said electrical IF signal and said fixed electrical local oscillator signal to generate an electrical output signal suitable for signal processing (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

Regarding claim 25, Gurunathan et al further teaches an optical filter placed in front of the first conversion unit (Fig. 2, col. 2, lines 49-67, col. 3, lines 1-67, col. 4, lines 1-7 and col. 7, lines 10-15).

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1, 3, 5-12 and 22-31 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

  
**HANH PHAN**  
**PRIMARY EXAMINER**